Zipp 60 & Zipp 30 Service Manual

SRAM LLC WARRANTY

Extent of Limited Warranty

Except as otherwise set forth herein, SRAM warrants its products to be free from defects in materials or workmanship for a period of two years after original purchase. This warranty only applies to the original owner and is not transferable. Claims under this warranty must be made through the retailer where the bicycle or the SRAM component was purchased. Original proof of purchase is required. Except as described herein, SRAM makes no other warranties, guaranties, or representations of any type (express or implied), and all warranties (including any implied warranties of reasonable care, merchantibility, or fitness for a particular purpose) are hereby disclaimed.

Local law

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state (USA), from province to province (Canada), and from country to country elsewhere in the world.

To the extent that this warranty statement is inconsistent with the local law, this warranty shall be deemed modified to be consistent with such law, under such local law, certain disclaimers and limitations of this warranty statement may apply to the customer. For example, some states in the United States of America, as well as some governments outside of the United States (including provinces in Canada) may:

Preclude the disclaimers and limitations of this warranty statement from limiting the statutory rights of the consumer (e.g. United Kingdom).

Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.

For Australian customers:

This SRAM limited warranty is provided in Australia by SRAM LLC, 133 North Kingsbury, 4th floor, Chicago, Illinois, 60642, USA. To make a warranty claim please contact the retailer from whom you purchased this SRAM product. Alternatively, you may make a claim by contacting SRAM Australia, 6 Marco Court, Rowville 3178, Australia. For valid claims SRAM will, at its option, either repair or replace your SRAM product. Any expenses incurred in making the warranty claim are your responsibility. The benefits given by this warranty are additional to other rights and remedies that you may have under laws relating to our products. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Limitations of Liability

To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event shall SRAM or its third party suppliers be liable for direct, indirect, special, incidental, or consequential damages.

Limitations of Warranty

This warranty does not apply to products that have been incorrectly installed and/or adjusted according to the respective SRAM user manual. The SRAM user manuals can be found online at sram.com, rockshox.com, avidbike.com, truvativ.com, or zipp.com.

This warranty does not apply to damage to the product caused by a crash, impact, abuse of the product, non-compliance with manufacturers specifications of usage or any other circumstances in which the product has been subjected to forces or loads beyond its design.

This warranty does not apply when the product has been modified, including, but not limited to any attempt to open or repair any electronic and electronic related components, including the motor, controller, battery packs, wiring harnesses, switches, and chargers.

This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage as a result of normal use, failure to service according to SRAM recommendations and/or riding or installation in conditions or applications other than recommended.

Wear and tear parts are identified as:

- Dust seals
- Bushings
- Air sealing o-rings
- Glide rings
- Rubber moving parts
- Foam rings
- Rear shock mounting hardware and main seals
- Upper tubes (stanchions)
- Stripped threads/bolts (aluminium, titanium, magnesium or steel)
- Brake sleeves
- Brake pads
- Chains
- Sprockets
- Cassettes
- Shifter and brake cables (inner and outer)
- Handlebar grips
- Shifter grips
- Jockey wheels
- Disc brake rotors
- Wheel braking surfaces
- Bottomout pads
- Bearings
- Bearing races
- Pawls
- Transmission gears
- Spokes
- Free hubs
- Aero bar pads
- Corrosion
- Tools
- Motors
- Batteries

Notwithstanding anything else set forth herein, this warranty is limited to one year for all electronic and electronic related components including motors, controllers, battery packs, wiring harnesses, switches, and chargers. The battery pack and charger warranty does not include damage from power surges, use of improper charger, improper maintenance, or such other misuse.

This warranty shall not cover damages caused by the use of parts of different manufacturers.

This warranty shall not cover damages caused by the use of parts that are not compatible, suitable and/or authorised by SRAM for use with SRAM components.

This warranty shall not cover damages resulting from commercial (rental) use.

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SAFETY FIRST!

We care about YOU. Please, always wear your safety glasses and protective gloves when servicing Zipp products.
Protect yourself! Wear your safety gear!

Rear Hub Service

You can service your hub while the hub is still in the wheel. However, if your spokes or rim are damaged, you can remove the hub from the wheel which will make servicing your hub easier. To remove the hub, use a spoke wrench to detension the spokes, then use a pair of metal snips to cut the spokes, remove the hub from the wheel, and remove the spoke ends from the hub (not pictured).

Tools Needed for Service

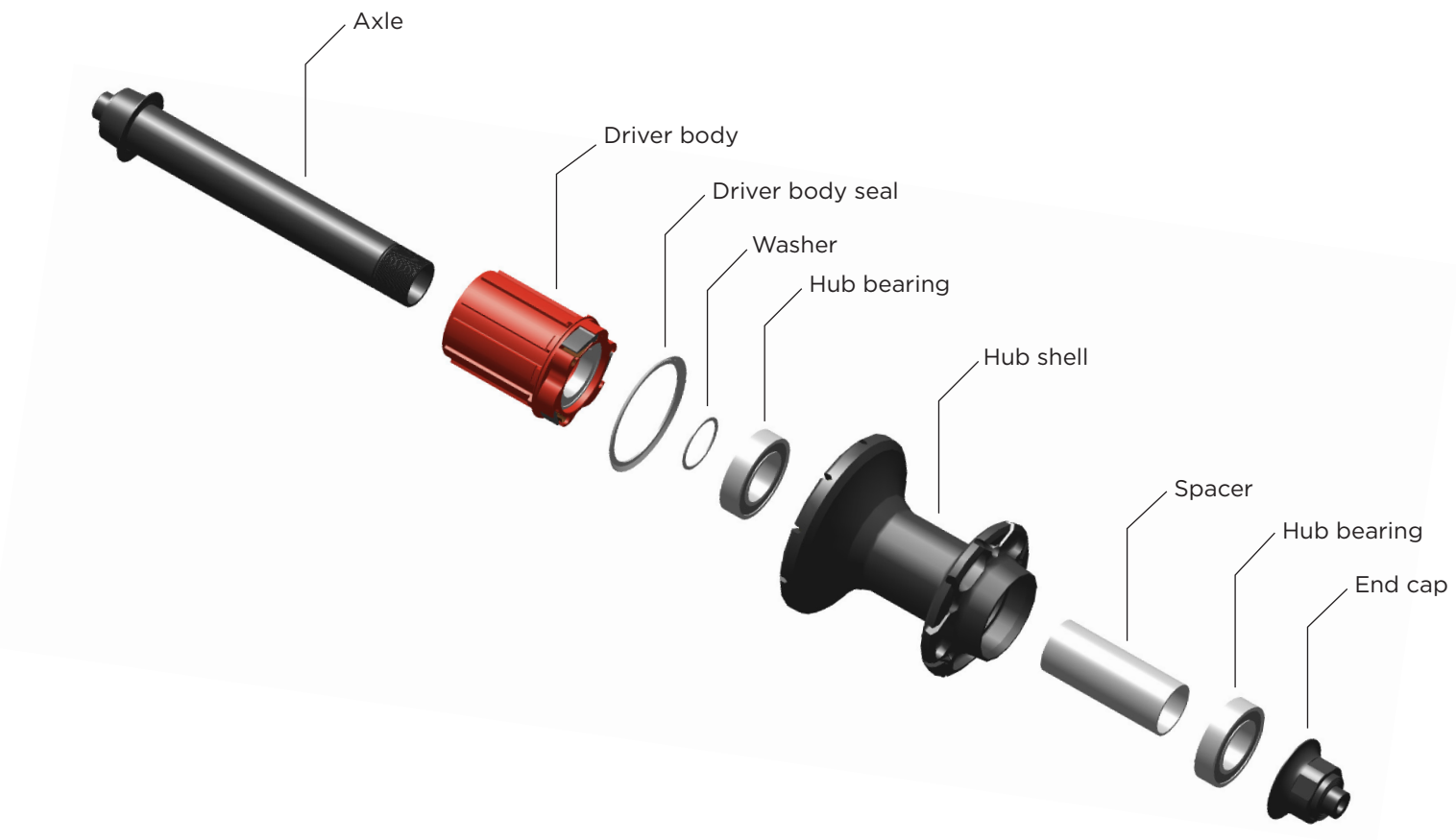
Safety glasses
Nitrile Gloves
5 mm hex wrench
20 mm cone wrench
Enduro Universal Blind Hole Bearing Puller Set
17 mm Blind Hole Bearing Puller slotted attachment
Wheels Manufacturing Press-1 Sealed Bearing Press Kit
(2) 6903 Adapters from Press-1 Kit
Lithium-based grease
Grease brush

Replacement Parts

Hub bearings
Driver body
Driver body pawls
Driver body leaf springs
Driver body seal
End cap
Washer

For part numbers, please refer to the Zipp Spare Parts Catalog in the Support section of www.zipp.com.

Rear Hub



Disassembly

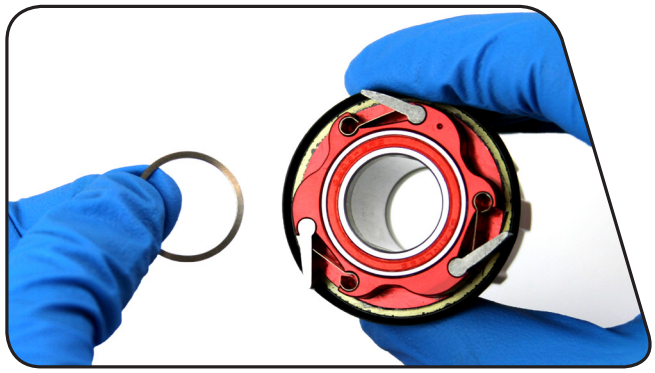
1 Insert a 5 mm hex wrench into the drive side end cap while holding the non-drive side end cap with a 20 mm cone wrench. Hold the 5 mm wrench in place and turn the 20 mm cone wrench counter-clockwise to remove the non-drive side end cap.

The drive side end cap is attached to the axle and cannot be removed.

2 Remove the driver body assembly from the hub shell.

3 Remove the axle, by hand, from the driver body.

4 Locate and remove the flat washer from in between the driver body and hub shell bearing. Discard if replacing or set it aside until the hub is ready for reassembly.



5 Insert the 17 mm Blind Hole Bearing Puller slotted attachment through the non-drive side bearing. Align the attachment with the bottom of the bearing, and tighten it inside the bearing.

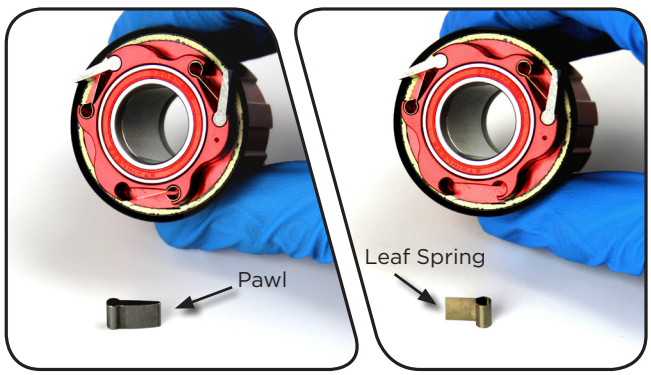
Do not over tighten the slotted attachment. For more detailed assembly and usage, see your bearing puller's manufacturer's instructions.

Thread the bearing puller rod into the attachment. Grip the handle and forcefully pull out to remove the bearing from the hub shell.

Remove the spacer from the hub shell; discard if replacing or set it aside until the hub is ready for reassembly.

Remove the bearing from the bearing puller. Repeat this process to remove the drive side bearing.

6 Use your fingers or a pick to carefully remove the pawls and leaf springs. If any of the pawls or leaf springs exhibit signs of damage, replace all of them. Otherwise, remove any grease on the pawls and leaf springs with a clean rag.



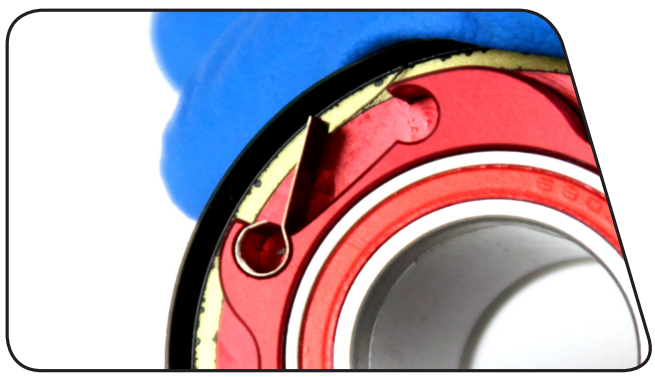
7 Use your fingers to remove the driver body seal. Inspect the driver body seal for signs of damage or wear. If there are any signs of damage or wear, replace it. Otherwise, remove any grease on the driver body seal with a clean rag.

Assembly

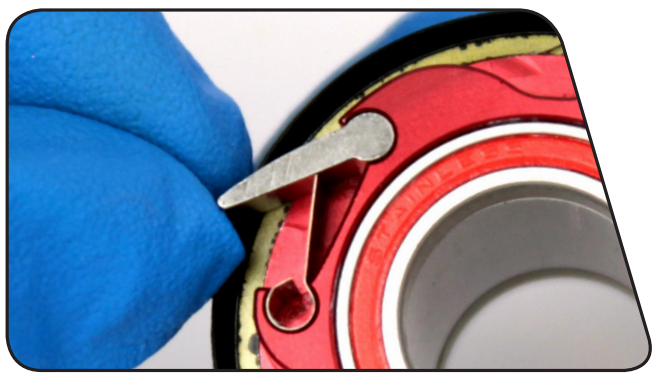
1 Press the driver body seal, with the smooth side facing the driver body, over the leaf spring and pawl carrier.

The driver body seal must be fully seated against the thin shoulder of the driver body.

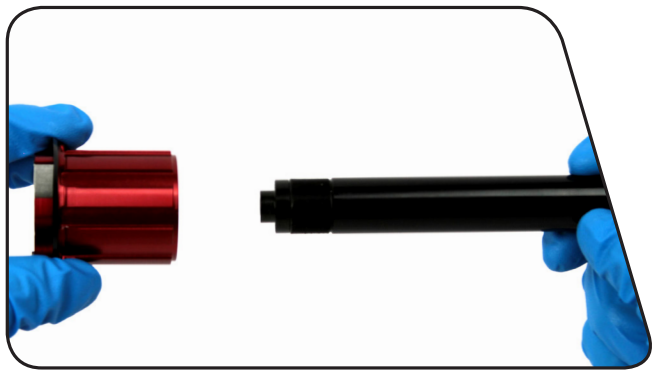
2 Insert the leaf springs into the spring slots. Orient the long edge of each spring along the inside of the carrier so that it points clockwise.



3 Insert the pawls into the pawl slots. You may need to use a pick to compress each leaf spring to assist with inserting the pawls. Orient the cambered edge (the edge that is slightly more curved) of each pawl along the outside of the carrier so that it points counter-clockwise.



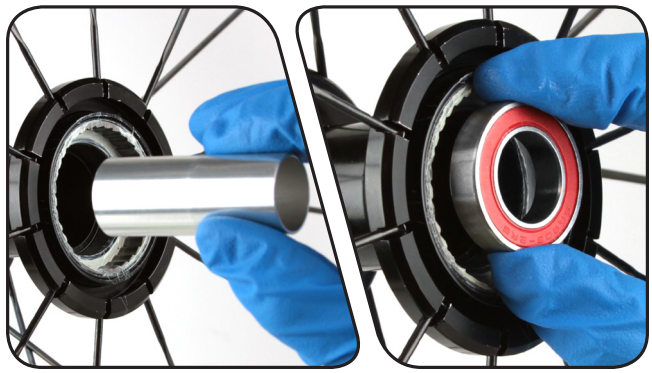
4 Insert the axle through the driver body.



5 Slide the flat washer over the axle until it rests on the leaf spring and pawl carrier.

6 Install the spacer and a new bearing into the end of the hub shell by hand.

Install the drive side bearing first.



7 Install a 6903 adapter onto the Wheels Manufacturing Press-1 Sealed Bearing Press tool. Slide the threaded rod of the bearing press through the non-drive side end of the hub shell and out of the drive side of the hub shell.

Twist the bearing press handle onto the threaded rod.

Turn the bearing press handle clockwise to press the bearing into the hub until it is hand-tight.

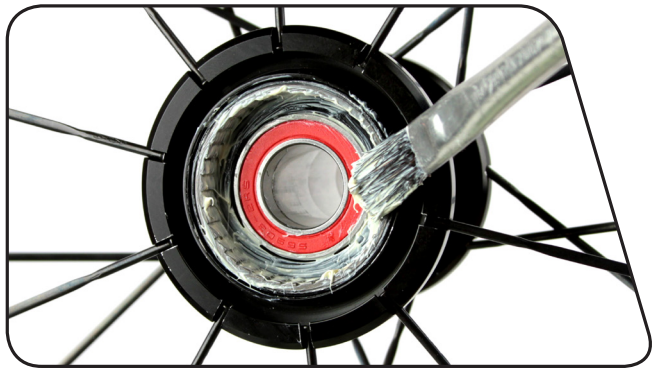
Do not overtighten the bearing.

Repeat this process to install the other new bearing.

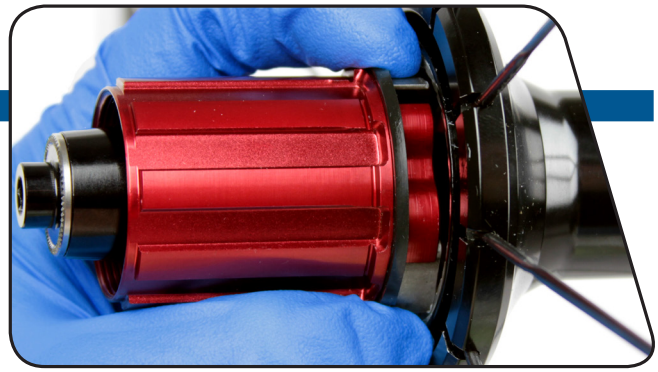
NOTICE

To prevent damage to the bearing, only use a bearing press tool that contacts both the inner and outer races of the bearing. Do not use a bearing press tool that contacts only one race.

8 Apply a small amount of lithium based grease (an amount roughly half the size of a pea) to the driver body rachet ring.

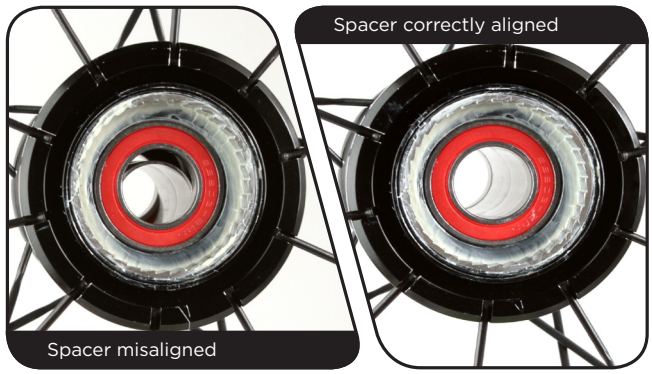


9 Slide the driver body assembly through the drive side of the hub shell. Use your fingers to compress the pawls to fully seat and engage the pawls with the driver body ratchet ring.



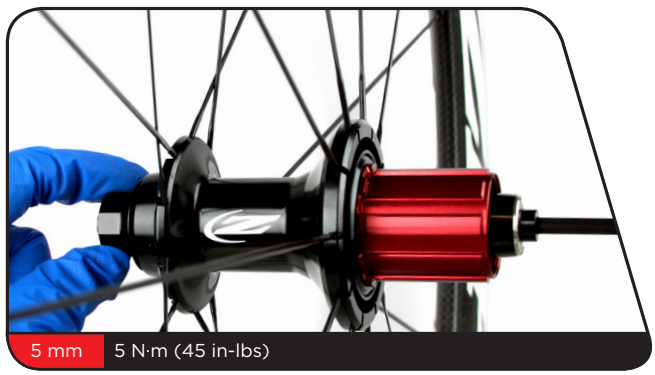
NOTICE

The hub shell's floating spacer can become offset during hub reassembly. If this occurs, use your finger to realign and center the spacer.



10 Insert a 5 mm hex wrench into the drive side end cap. Hold the wrench in place and gently thread the non-drive side end cap, by hand, onto the axle until it bottoms out and stops turning. Tighten non-drive side end cap to 5 N·m (45 in-lb).

For spoke installation, proceed to *Wheel Lacing & Spoke Replacement* section (if necessary).



Front Hub Service

You can service your hub while the hub is still in the wheel. However, if your spokes or rim are damaged, you can remove the hub from the wheel which will make servicing your hub easier. To remove the hub, use a spoke wrench to detension the spokes, then use a pair of metal snips to cut the spokes, remove the hub from the wheel, and remove the spoke ends from the hub (not pictured).

Tools Needed for Service

Safety glasses

Nitrile Gloves

(2) 5 mm hex wrenches

Enduro Universal Blind Hole Bearing Puller Set

Wheels Manufacturing Press-1 Sealed Bearing Press Kit

(2) 6803 Adapters from Press-1 Kit

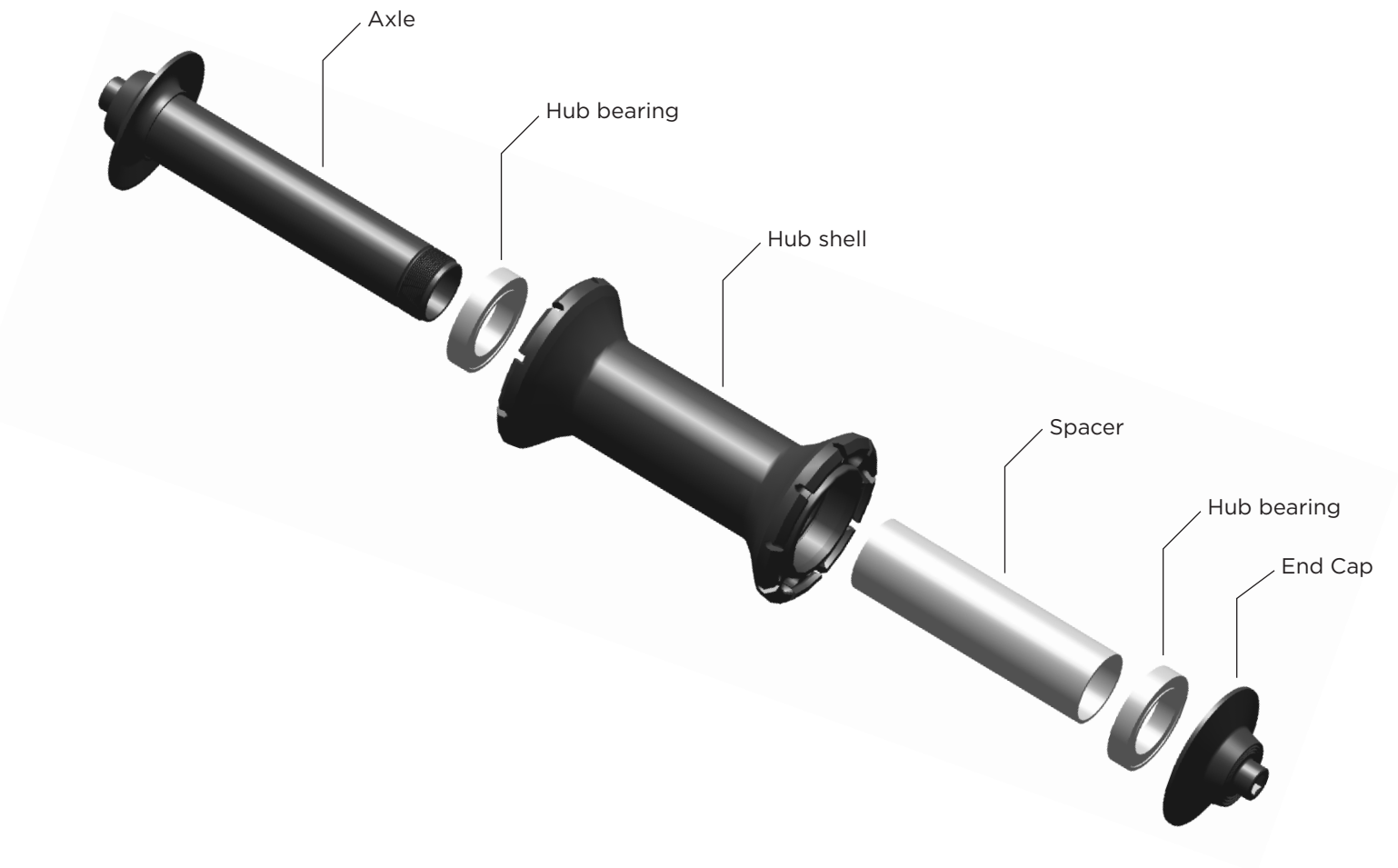
Replacement Parts

Hub bearings

End cap

For part numbers, please refer to the Zipp Spare Parts Catalog in the Support section of www.zipp.com.

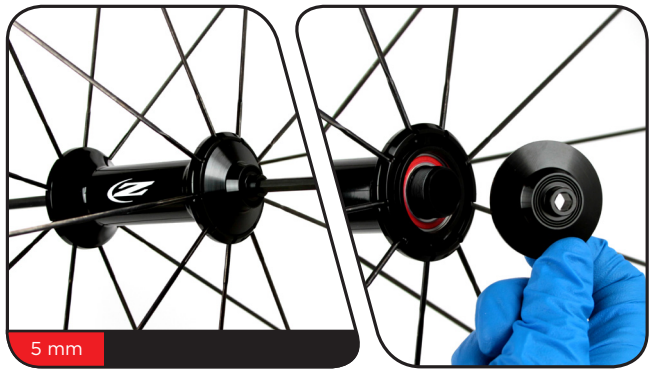
Front Hub



Disassembly

1 Insert a 5 mm hex wrench into both end caps. Hold the drive side wrench in place and turn the non-drive side end cap counter-clockwise to remove it.

The drive side end cap is attached to the axle and cannot be removed.



2 Remove the axle, by hand, from the hub shell.

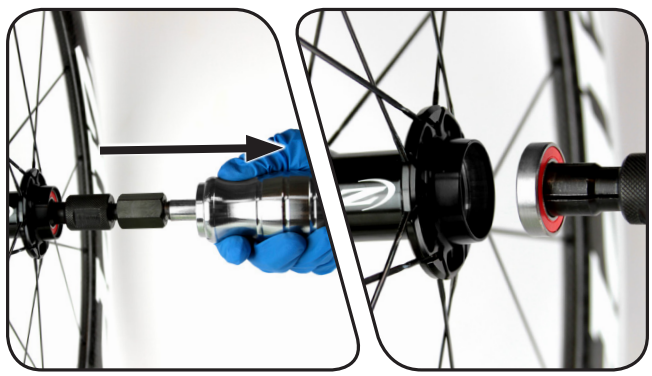
3 Insert the 17 mm Blind Hole Bearing Puller slotted attachment through the non-drive side bearing. Align the attachment with the bottom of the bearing, and tighten it inside the bearing.

Do not over tighten the slotted attachment. For more detailed assembly and usage, see your bearing puller's manufacturer's instructions.

Thread the rod of the bearing puller into the attachment. Grip the handle and forcefully pull out to remove the bearing from the hub shell.

Remove the spacer from the hub shell; discard if replacing or set it aside until the hub is ready for reassembly.

Remove the bearing from the bearing puller. Repeat this process to remove the non-drive side bearing.



Assembly

1 Install a new bearing and spacer into end of the hub shell by hand.

Install the drive side bearing first.

2 Install a 6803 adapter onto the Wheels Manufacturing Press-1 Sealed Bearing Press tool. Slide the threaded rod of the bearing press through the non-drive side end of the hub shell and out of the drive side of the hub shell.

Twist the bearing press handle onto the threaded rod.

Turn the bearing press handle clockwise to press the bearing into the hub until it is hand-tight. Do not overtighten the bearing.

Repeat this process to install the other new bearing.

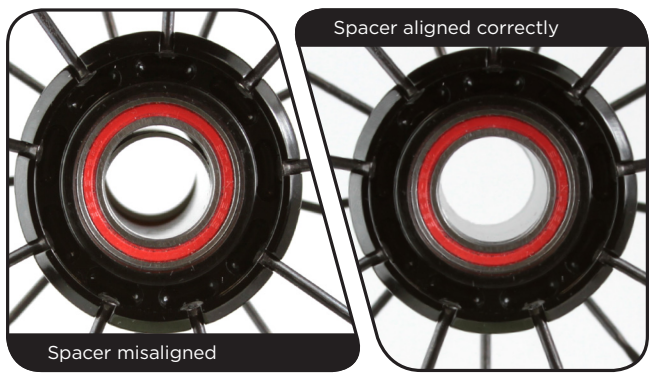
NOTICE

To prevent damage to the bearing, only use a bearing press tool that contacts both the inner and outer races of the bearing. Do not use a bearing press tool that contacts only one race.

3 Insert the axle through the hub shell assembly.

NOTICE

The hub shell's floating spacer can become offset during hub reassembly. If this occurs, use your finger to realign and center the spacer.



4 Insert a 5 mm hex wrench into the drive side end cap. Hold the wrench in place and gently thread the non-drive side end cap onto the axle until it bottoms out and stops turning. Tighten non-drive side to 5 N·m (45 in-lb).

For spoke installation, proceed to *Wheel Lacing & Spoke Replacement* section (if necessary).

Wheel Build & Spoke Replacement

This portion of the service guide covers general wheel build and spoke replacement. There are many different methods for spoke tensioning; the following information provides the final spoke tension you should achieve using your preferred method for spoke tensioning.

Tools Needed for Service

Safety glasses

Bladed spoke adjustment tool (ex. Park Tool® BSH-4)

Spoke wrench: Park Tool® SW-15 for internal spoke nipples

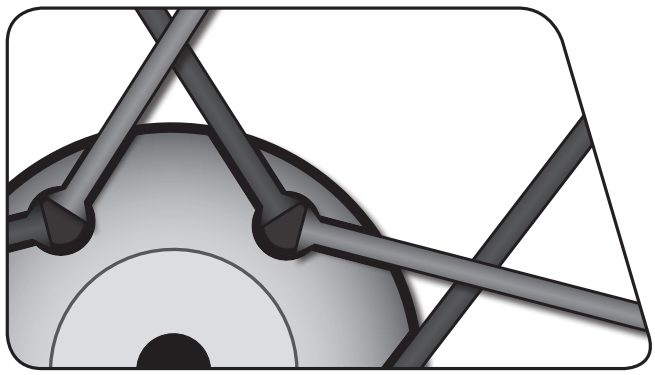
Spoke wrench: Park Tool® SW-40 for external spoke nipples

Tensiometer with tension conversion chart

Truing stand

Wheel Build Tips

- Lightly coat the threads of the replacement spokes with Loctite® 577.
- During the wheel build process, pre-stress the wheel by lightly squeezing pairs of spokes to ensure the spokes seat properly in both the hub and the rim.
- Zipp wheels use both radial and 1 cross spoke lacing patterns. For 1 cross lacing patterns, the spokes that point rearward should be installed ***on the bottom*** so they sit against the hub shell. The spokes that point forward should be installed ***on the top.***
- Control wheel roundness by tightening/loosening the drive side spokes.
- Control wheel trueness by tightening/loosening the non-drive side spokes.
- Use a bladed spoke adjustment tool to prevent the spokes from twisting during adjustment.



1 cross lacing pattern

Replacement Parts

For part numbers, please refer to the Zipp Spare Parts Catalog in the Support section of www.zipp.com.

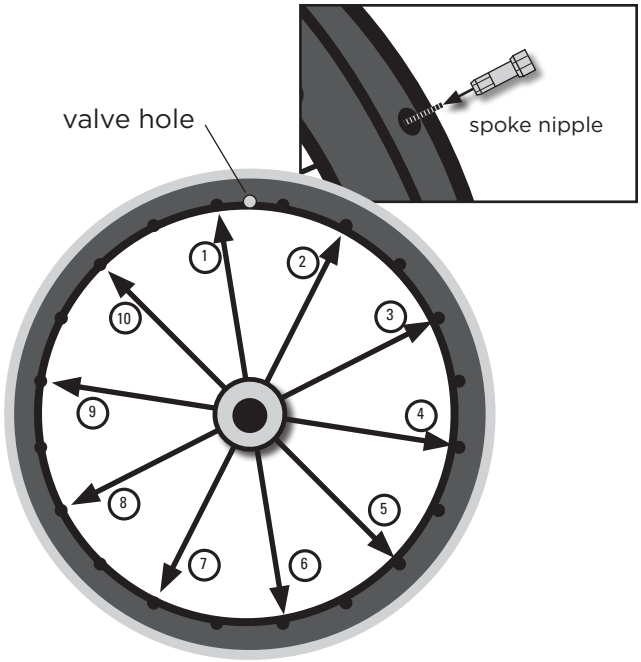
Zipp 30 and Zipp 60

Use Sapim CX-Ray replacement spokes

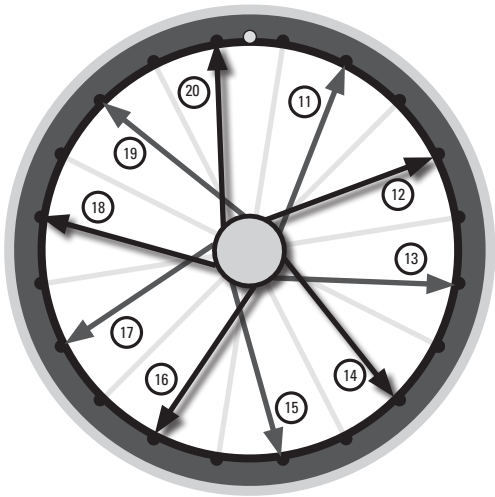
		Spoke Count	Spoke Length	Lacing Pattern	Final Spoke Tension
Front Wheel	Drive side	9	Zipp 60: 246 mm Zipp 30: 274 mm	Radial	Zipp 60: 110 ± 15 kgf (1079 N ± 147 N) Zipp 30: 120 ± 15 kgf (1176 N ± 147 N)
	Non-drive side	9			
Rear Wheel	Drive side	10	Zipp 60: 236 mm Zipp 30: 262 mm	Radial	Zipp 60: 110 ± 15 kgf (1079 N ± 147 N) Zipp 30: 140 ± 15 kgf (1373 N ± 147 N)
	Non-drive side	10	Zipp 60: 252 mm Zipp 30: 278 mm	1 cross	Zipp 60: 40 ± 20 kgf (392 N ± 196 N) Zipp 30: 60 ± 20 kgf (588 N ± 196 N)

Rear Wheel Lacing

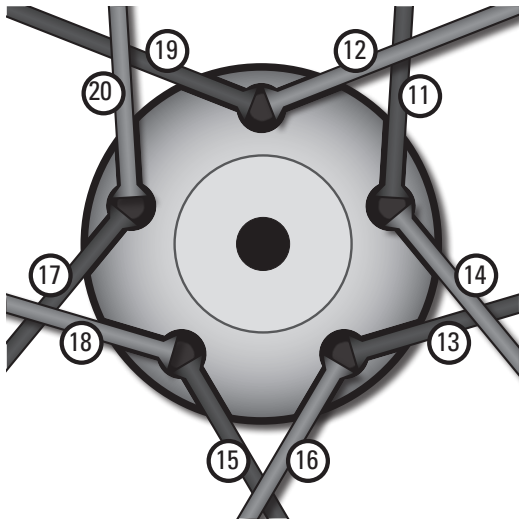
1. Start on the drive side of the wheel.
   Zipp 60: Orient the wheel so that the serial number text in the tire bed is upside down and the cassette driver body of the rear hub is facing up.
   Zipp 30: Orient the wheel so that the serial number text on the rim wall is facing down, and the cassette driver body of the rear hub is facing up.
2. Insert the threaded end of spoke ① into the first hole *to the left* of the rim valve hole. Carefully thread a spoke nipple onto the spoke, 1/2 turn. Install the head of spoke ① into one of the spoke slots of the drive side hub flange.
3. Repeat this procedure for the remaining 9 drive side spokes, following the illustrated drive side lacing pattern.
4. Carefully turn the wheel over so that the cassette driver body is facing down.
5. Insert the threaded end of spoke ⑪ into the second hole *to the right* of the rim valve hole. Carefully thread a spoke nipple onto the spoke, 1/2 turn. Install spoke ⑪ into the hub flange spoke slot closest to the 3 o'clock position that angles toward the valve hole
6. Insert the threaded end of spoke ⑫ into the fourth hole *to the right* of the rim valve hole. Carefully thread a spoke nipple onto the spoke, 1/2 turn. Install spoke ⑫ into the hub flange spoke slot closest to the 12 o'clock position that angles to the right.
7. Repeat this procedure for the remaining 8 non-drive side spokes. Refer to the spoke lacing diagram for the proper spoke installation pattern.
8. Use a spoke wrench to turn each of the the drive side spokes in 1/2 turn increments until the drive side spoke tension is at approximately 30-40% of the final value: **45-60 kgf (441-588 N)**
9. Install the wheel into a truing stand and check for roundness. Tighten or loosen the drive side spokes until the wheel is round.
10. Use a spoke wrench to turn each of the spokes in 1/2 turn increments to increase non-drive side spoke tension. Continually check for roundness (vertical movement) and trueness (side-to-side movement). Refer to the Wheel Building Tips for ways to control roundness and truness.
11. Continue tightening both drive side and non-drive side spokes in 1/8 - 1/4 turn increments until the final tension has been acheived. Refer to the spoke chart for recommended final tension measurements.



drive side lacing pattern



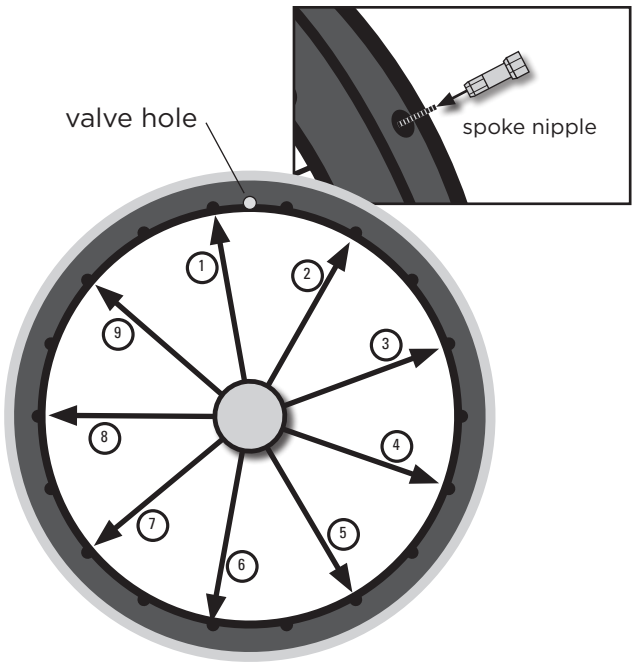
non-drive side lacing pattern



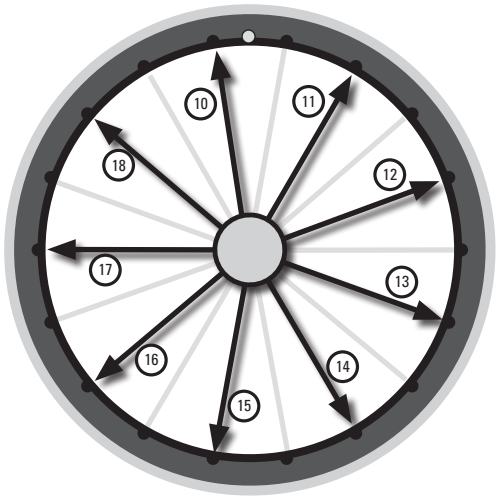
non-drive side spoke lacing diagram

Front Wheel Lacing

1. Orient the wheel so that the crescent of the hub logo is facing the non-drive side of the wheel when assembled.
2. Insert the threaded end of spoke ① into the first hole *to the left* of the rim valve hole. Carefully thread a spoke nipple onto the spoke, 1/2 turn. Loosen the endcap to allow enough space for spoke installation. Install spoke ① into one of the spoke slots of the hub flange.
3. Repeat this procedure for the remaining 8 spokes on this side of the wheel, following the illustrated lacing pattern.
4. Carefully turn the wheel over.
5. Insert the threaded end of spoke ⑩ into the first hole *to the left* of the rim valve hole. Carefully thread a spoke nipple onto the spoke, 1/2 turn. Install spoke ⑩ into the hub flange spoke slot closest to the 12 o'clock position.
6. Repeat this procedure for the remaining 9 spokes. Refer to the spoke lacing diagram for the proper spoke installation pattern.
7. Install the wheel into a truing stand. Use a spoke wrench to turn each of the spokes in 1/2 turn increments to increase spoke tension. Continually check for roundness (vertical movement) and trueness (side-to-side movement).
8. Continue tightening both drive side and non-drive side spokes in 1/8 - 1/4 turn increments until the final tension has been acheived. Tighten the non-drive side endcap to 5 N·m (45 in-lb). Refer to the spoke chart for recommended final tension measurements.



radial lacing pattern



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